DATE 30 Sep 03

USAMMDA INFORMATION PAPER

PRODUCT: ENTEROTOXIGENIC ESCHERICHIA COLI VACCINE (WR/SW/NV)

DESCRIPTION: The enterotoxigenic *Escherichia coli* (ETEC) vaccine is an orally administered vaccine intended to prevent severe diarrhea and fever caused by toxic strains of the bacterium *E. coli*. The vaccine consists of killed, whole cells of the five most common strains of enterotoxin-producing *E. coli*, combined with a recombinantly produced beta subunit of the cholera toxin. The cholera toxin beta subunit is similar to the beta subunit found in the *E. coli* heat-labile (sensitive) toxin. The enterotoxins of the cholera organism and the ETEC organism cannot cause illness unless both alpha and beta subunits are present, but the beta subunits alone can induce strong immune responses. SBL Vaccin AB, Stockholm, Sweden, manufactures the vaccine. ETEC bacteria cause diarrheal disease that varies in severity from a mild one-day illness with abdominal cramps, vomiting, mild diarrhea and fever, to a severe diarrhea similar to cholera that causes severe dehydration and shock from fluid loss. ETEC causes more than 600 million cases of diarrhea per year and kills some 800,000 infants per year worldwide. ETEC causes most diarrhea in soldiers deployed to developing countries. ETEC diarrhea frequently interfered with the duties of U.S. troops during Operation Desert Shield/Storm (ODS). During ODS, 57 percent of troops experienced diarrhea, over 33% due to ETEC. Diarrheal illness from ETEC can limit significantly the mobility of U.S. Forces and decrease their efficiency and functional capability at critical times soon after deployment.

PROGRAM RELEVANCE to the ARMY: This product supports both the core mission of the Army and the Army Transformation. Of the Army's core competencies, this product supports: "Shape the Security Environment," "Forcible Entry Operations," "Sustained Land Dominance" and "Support Civil Authorities" by protecting U.S. Forces against diarrheal illness caused by enterotoxigenic *E. coli* bacteria. The ETEC vaccine will enhance the survivability and sustainability of U.S. Forces in regions of the world where ETEC disease is endemic. In addition, this product supports Future Operational Capability MD97-007 (Preventive Medicine).

ISSUES/ ACTIONS:

- A Phase 3 pivotal efficacy trial among soldiers of the Israeli Defence Force finished all clinical and surveillance activities in January 2002. On-site monitoring visits have been completed and a final monitoring report was filed in 1QFY03. Data analyses should be completed by 1QFY04.
- A Phase 2 safety, immunogenicity and efficacy trial in Egyptian infants has been completed; final data analyses showed the vaccine to be ineffective.
- A Phase 3 pivotal efficacy trial in Western adult travelers to Mexico and Guatemala has been stopped due to slow enrollment (this study was sponsored and funded by SBL Vaccin AB and conducted under a different IND held by SBL Vaccin AB). Analyses of extant data by SBL Vaccin AB are in-progress.
- Further clinical development of this vaccine is not contemplated at this time. Once data are available from all efficacy trials, a special In-Process Review to terminate the program is likely.
- A request to move the scheduled Special IPR to 2QFY04 has been submitted.

BPL #: 306
DA PROJECT/TASK: Infectious Diseases
PE/PROJ 643807.849ND
MAMP RANK: 4/36
ARMY ORD: ETEC Vaccine; CARDS #1494 9 Aug 94

SCHEDULE:	
MS I	4QFY93
MS II	3QFY94
Special IPR	2QFY04

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